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DOI:

[10.1136/bmj.i5417](https://doi.org/10.1136/bmj.i5417)

Document Version

Publisher's PDF, also known as Version of record

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Citation for published version (APA):

Pannick, S., Wachter, R. M., Vincent, C., & Sevdalis, N. (2016). Rethinking medical ward quality. *BMJ (Clinical research ed.)*, 355, i5417. <https://doi.org/10.1136/bmj.i5417>

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ANALYSIS

Rethinking medical ward quality

For quality to improve, we need to embrace the complexities of general medical inpatient care, say **Samuel Pannick and colleagues**

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Medical wards deliver the majority of acute inpatient care in health systems worldwide. This care is expensive, costing the NHS around £5bn (€5.5bn; \$6.2bn) a year, a quarter of its inpatient expenditure.¹ Improving the performance of medical wards is an international priority,^{2,3} not only because of the scale of care that they deliver. Their core workload—treating complex, increasingly frail patients in a time pressurised setting—represents the broader challenges facing healthcare.⁴ Yet major gaps remain in our understanding of how wards perform.⁵⁻⁷

Safety and quality interventions have been most effective in improving standardised clinical tasks in the operating theatre and intensive care unit, such as the insertion of central venous catheters. The processes of ward care require a more nuanced approach to improvement. Medical patients' clinical syndromes often fall between traditional diagnostic categories,⁸ and specific organisational challenges exist for the teams that care for them. We discuss the unique properties of medical wards and the problems they face, before setting out a vision for ward improvement that embraces the complexity of ward care.

The medical ward is a different animal

Important differences exist between medical wards and other clinical settings, from haemodialysis units to operating theatres. Medical ward teams care for a particularly heterogeneous group of patients, with no single best pathway for diagnosis or treatment. Staff are skilled in the management of a diverse range of conditions, from pyelonephritis to gastrointestinal bleeding and terminal cancer. Many patients arrive without a diagnosis; indeed, empirical treatment can be concluded with no definitive diagnosis ever established. This sets medical wards apart from other hospital settings, which typically manage more narrowly defined patient populations with more predictable care trajectories. With such heterogeneity, medical ward teams may struggle to articulate their clinical and business aims and are

better defined by their interpersonal networks and the flow of information within them.⁹

Episodes of medical ward care can be long, involving large, dynamic, multidisciplinary teams. Team members are often dispersed throughout the hospital; physicians and allied health professionals are rarely located together on one unit with nurses and their patients. Frequent handovers are made more difficult by the absence of a central procedure around which a structured care narrative can be formed.

Errors are common and often serious—medical ward patients have the same risks of preventable and fatal adverse events as those in intensive care,^{7,10} and preventable hospital deaths are disproportionately caused by failures in general ward care.⁶ Crucially, ward failures are different from the procedural misadventures of the operating theatre or intensive care unit,¹⁰ resulting instead from the accumulation of missed opportunities to provide needed care.^{6,11} As a result, medical ward care may be 10-100 times more hazardous than elective surgery or low risk anaesthesia, crossing a perceived threshold into “unsafe” care.¹²

Even with this risk profile, medical wards struggle to attract the resources they need to improve.¹³ Senior decision makers may be less motivated to combat errors of omission on the ward, judging them more leniently than equally harmful errors of action.^{14,15} Responsibility for ward harms is spread diffusely, and the number of possible improvement targets may be overwhelming.⁷ Operating theatres, intensive care units, and specialty services draw more organisational attention, owing to their higher status and concentrated focus.^{13,16}

Improvement strategies devised for more structured clinical settings—namely, the intensive care unit and operating theatre—undergo little further testing on medical wards,¹⁷ even though their implementation faces different challenges (table

1↓). Wards may require a different combination of safeguards and tools to reliably deliver high quality care.

Variations in ward care are ignored

More variation—in adverse event rates, safety and teamwork climates, job satisfaction, and perceptions of management—is found within hospitals than between them.²⁵⁻³⁰ Pronovost and Sexton cautioned against a falsely unified view of each hospital's practice,²⁷ and public inquiries have found islands of excellence alongside wards with egregious deficiencies.^{25 26} Improvement efforts have accentuated this trend: within-hospital differences remain high.³⁰ Data analysis should target wards more intensively,^{28 29} providing a better understanding of variations in care that would enable the selection and tailoring of appropriate improvement interventions. Monitoring data from the ward is also typically needed for successful implementation.³¹

Instead, most published measures of healthcare quality—mortality, readmissions, and patient experience, for example—evaluate entire hospitals, not individual units. On both sides of the Atlantic, governments, regulators, and consumer organisations prioritise grades based on hospital aggregated data.^{32 33} Overlooking variations in ward performance results in blanket hospital grades that are unreliable³⁴ and aggregated hospital outcomes that are not accurate indicators of quality of care.³³⁻⁴² Aggregate measures obscure the need for greater investment in ward specific datasets. Without them, major policy decisions—on the adequacy of resources for safe staffing, for example—will be based on incorrect inferences drawn from averaged, hospital-wide data.⁴³

Quality metrics for medical wards should embrace complexity of care

Patients on medical wards primarily come to harm through suboptimal clinical monitoring, diagnostic errors, and inadequate drug or fluid management.⁶ These reflect the fundamental challenges of ward care, which is a dynamic, evolving, team process of assessment and reassessment. Quality metrics should reflect this complexity, but more commonly impose a reductive concept of care, where evidence based treatments are either delivered or not.

The quality of medical inpatient care in the US is represented by a set of common “tracer” conditions: myocardial infarction, pneumonia, congestive heart failure, chronic obstructive pulmonary disease, stroke, and venous thromboembolism.⁴⁴ Treating these conditions in a timely and effective manner is an understandable concern: they represent a significant burden of disease. Nonetheless, their prioritisation—with a national mandate to publicly report relevant process measures and outcomes—may be ineffective^{45 46} and has opportunity costs. Disease specific quality metrics do little to incentivise robust systems of care that protect complex medical patients from harm.⁴⁷ Rather, they imply that high quality care in this setting is best achieved by focusing on individual pathologies, one at a time.

The NHS is taking a different approach. NHS England recently issued an updated set of 10 overarching clinical standards for acute care,⁴⁸ which include shared decision making; early multidisciplinary assessment; multiprofessional handovers; repeated senior review; and attention to patient experience, safety, and clinical effectiveness. These aspirations are better aligned with the needs of a complex patient population, yet are still backed by a series of levers and incentives.⁴⁹

The future ward: four strategies to manage complexity

We envisage four broad categories of ward intervention to tackle complexity. The first two aim to reduce unnecessary variation, standardising and simplifying how predictable challenges are handled. The last two make better use of existing resources to optimise how complex care is managed (fig 1↓).

Standardise predictable care tasks to reduce specific harms

Interventions to improve the delivery of disease specific care are useful—they standardise common, predictable care tasks by establishing clear technical standards and introducing the socioadaptive changes necessary to embed them. Efforts to reduce central line associated infections and catheter associated urinary tract infections in this way have been notable successes.^{31 50} But staff may tire of numerous single issue, best practice campaigns. Each new initiative risks diluting attention to existing commitments⁵¹ and adds to the growing burden of costly performance data reporting.^{52 53} Standardisation efforts should be selected strategically, mindful of the organisation's capacity to implement them.⁵⁴

Simplify the care environment and the systems that support care delivery

The ward environment is rarely a focus for national initiatives.²² Excess noise, poorly designed supply chains, convoluted communication pathways, and inaccessible information force frontline staff to develop arduous workarounds. These complicate predictable tasks and reduce the time available for direct clinical care.^{55 56}

Interventions to improve the clinical environment and its support structures can reduce these unnecessary burdens and are likely to be cost effective.⁵⁷ Current intervention targets for patient safety organisations and researchers include standardised alarm parameters for devices; electronic communication channels between ward teams and the specialists who provide them with intermittent advice; accessible decision support incorporating multimorbidity appropriate guidance; and internal supply chains. Together, these would reduce unwarranted sensory inputs and information overload, streamline information exchange, reliably deliver useful clinical prompts, and increase time spent with patients.

Optimise effectiveness of interdisciplinary teams

Highly performing teams are needed to manage complex tasks,⁵⁸ and optimising the effectiveness of interdisciplinary teams requires appropriate team structures.^{59 60} Many ongoing ward initiatives share common themes: unit based teams, located with their patients; physician and nurse co-leadership; structured interdisciplinary rounds; and ward level performance feedback.⁶¹⁻⁶⁴ These act as useful “scaffolds,” binding physicians, nurses, and allied health professionals together with collective accountability and a sense of belonging, even with fluid team membership.⁶⁵ Their impact remains uncertain,⁶⁶⁻⁶⁸ and few high quality studies have reported whether they reduce adverse events or complications of care.⁶⁶ Refining these interdisciplinary team structures remains a key challenge.^{61 69} Some authors have called for them to be incentivised, seeing them as vital for the rapid translation of evidence into ward practice.¹⁹

Patient engagement in transitions of care

With patients largely stabilised rather than “cured” by inpatient care, the distinction between hospital and home care has become blurred. Transition between the two involves complex interactions between patients and multiple healthcare providers, who are poorly coordinated. Patients struggle to understand their post-discharge plan, and self management at home is not well supported. As a result, 27% of medical readmissions are still preventable.^{70 71}

Higher quality, patient centred discharge documentation would help patients to self manage, but this alone will be insufficient to bridge the gap between health settings. We need more expansive care delivery changes.⁷² Novel care models could integrate inpatient and outpatient management for high risk patients, reducing care discontinuity.⁷³ Patients might be best supported by community “health agents” to facilitate the move from one care setting to the next.⁷⁴ These programmes are still being evaluated, but they offer an alternative to hospital focused readmission prevention schemes, which may not be financially sustainable.⁷⁵

Conclusion

High quality care on medical wards is easy to value, but its inherent complexity makes it difficult to improve.⁷⁶ Targeted resources, data collection, quality metrics, and ward improvement strategies that facilitate the management of complexity hold promise for our ageing inpatient population.

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Key messages

Data analysis and quality metrics do not take into account the inherent complexity of medical ward care

Organisational grades and scores mask important ward variation

Ward improvement strategies should be focused on complex decision making, not just the management of specific diseases

Ward based teams, physician and nurse co-leadership, structured interdisciplinary rounds, and ward level performance feedback may improve care

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Contributors and sources: All authors are engaged in academic research on healthcare quality improvement. RMW has extensive experience in healthcare policy internationally, and is credited as the founder of the hospitalist specialty in medicine. SP and RMW are practising physicians. CV has written widely on patient safety and healthcare quality, and has advised numerous governmental bodies on how to improve healthcare systems. NS has worked for over a decade on the team skills that underpin high quality care in the hospital setting, and how best practice is implemented. SP and NS wrote the first draft; all authors contributed to subsequent drafts. SP is the guarantor.

Competing interests: We have read and understood BMJ policy on declaration of interests and declare the following interests: RMW and CV report that they are members of the Lucian Leape Institute of the National Patient Safety Foundation (for which they receive no compensation). RMW has a contract with UCSF from the Agency for Healthcare Research and Quality to edit a patient safety website; receives compensation from John Wiley and Sons for writing a blog; receives royalties from Lippincott Williams & Wilkins and McGraw-Hill for writing/editing several books; received a stipend and stock/options for having previously served on the board of directors of IPC Healthcare; serves on the scientific advisory boards for Amino.com, PatientSafe Solutions, QPID Health, Twine, and EarlySense (for which he receives stock options); and holds the Benioff endowed chair in hospital medicine from Marc and Lynne Benioff. CV is supported by the Health Foundation, carries out consultancy work for the Swiss Federal Office of Health, and receives book royalties from Wiley Blackwell. NS is the director of London Training & Safety Solutions Ltd, which consults on team assessment and training and patient safety. NS's research is supported by the National Institute for Health Research (NIHR) Collaboration for Leadership in Applied Health Research and Care South London at King's College Hospital NHS Foundation Trust. NS is a member of King's Improvement Science, which is part of the NIHR CLAHRC South London and comprises a specialist team of improvement scientists and senior researchers based at King's College London. Its work is funded by King's Health Partners (Guy's and St Thomas' NHS Foundation Trust, King's College Hospital NHS Foundation Trust, King's College London and South London and Maudsley NHS Foundation Trust), Guy's and St Thomas' Charity, the Maudsley Charity and the Health Foundation. SP is supported by the NIHR Imperial Patient Safety Translational Research Centre and Imperial College Healthcare Charity. This paper represents independent research. The views expressed are those of the authors and not necessarily those of the NHS, the NIHR, or the Department of Health.

Provenance and peer review: Not commissioned; externally peer reviewed

Accepted: 04 10 2016

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Table

Table 1 | Improvement strategies

Strategy	Factors underpinning success in structured clinical settings	Challenges for medical wards
Safety checklists	Adaptation to specific patient group or workflow Consistent leadership and accountability ¹⁸	Heterogeneity of patients Teams are fluid and dispersed Responsibility divided between multiple teams
Specific harm reduction programmes	Strong evidence base for technical interventions to reduce hospital acquired harms, such as central line associated infections Implementation efforts tackle a limited set of products and critical events, occurring primarily in closely monitored settings ¹⁹ Alignment of clinical priorities, national patient safety initiatives, and influence of regulators/payers	Weaker evidence base for technical interventions to reduce common ward harms, such as pressure ulcers and falls ^{20 21} Successful implementation requires constant vigilance throughout long admissions with collaboration between teams Frontline perspectives on ward care are not prioritised in national initiatives ²²
Outcomes monitoring and feedback	Defined surgical outcomes directly reflect quality of inpatient care ^{23 24} Single episode of care on which performance is reliably assessed	Many outcomes for medical patients are determined by socioeconomic status and illness severity and are less representative of quality of care Diffuse episodes of care with shared responsibility, with multiple opportunities to judge performance

Figure

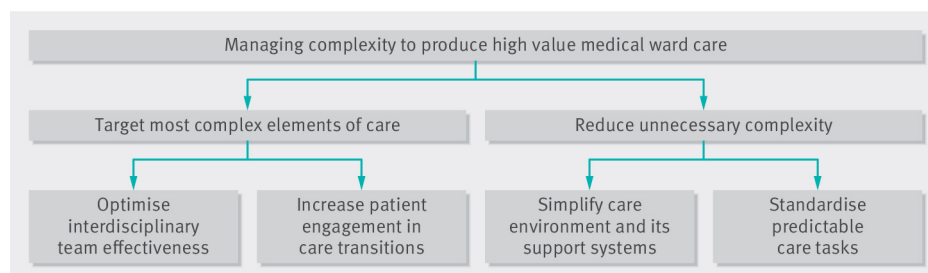


Fig 1 Categories of ward intervention to manage complex medical ward care